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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/382,708	08/24/1999	SON NGUYEN KIM	49322	5584
26474	7590	12/16/2003	EXAMINER	
KEIL & WEINKAUF 1350 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			WANG, SHENGJUN	
			ART UNIT	PAPER NUMBER

1617

DATE MAILED: 12/16/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/382,708

Applicant(s)

KIM ET AL.

Examiner

Shengjun Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 6, 2003 has been entered.

#### ***Claim Objections***

2. Claims 1 is objected to because of the following informalities: drawing of the carbonyl groups the formulas I-III is not clear. Appropriate correction is required.
3. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 11 depending from claim 1 recites component b is from 40 to 99% by weight, wherein claim 1 limit component b to 10-30% by weight.

#### ***Claim Rejections 35 U.S.C. 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chevreux et al. (US 4,717,739, of record).

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6. Chevreux et al. discloses a composition for use as adhesive (see the abstract). The composition is comprised of monomeric units of a urethane acrylate, acrylic acid, and a monoester of acrylic acid (see col. 2, lines 48-60). The amount of acrylate ranges up to 80% based on the combined weight of the acrylate and acrylic acid (see col. 3, lines 35-40), where the weight of acrylate and acrylic acid components can be up to 400% by weight compared to the urethane acrylate (see col. 2, line 55-61). The ratio of the acrylic acid to acrylate is about 1:2 to 9:1 (see the claim 1). Composition F in example 2 contains t-butyl acrylate, acrylic acid and urethane acrylate, wherein the urethane acrylate is comprised of poly(oxypropylene)glycol, acrylic acid, and toluene diisocyanate (see col. 10, lines 15-67). A wide variety of urethane acrylates are disclosed (see col. 3, line 66 to col. 6, line 16).

7. Chevreux et al. do not teach expressly a composition with particular range of each and very components.

8. However, the range herein claimed overlaps with the range disclosed by Chevreux et al.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ the amounts of each and every components herein because in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). (also see MPEP 2144.05).

9. Claims 1, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zanotti-Russo (US 6,140,435, of record).

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10. Zanotti-Russo teaches an acrylic copolymers which are particularly useful in cosmetic product, including hair treatment products. The copolymer is comprised of the following monomeric components: 10-97% of at least one unsaturated carboxylic acid, such acrylic acid, 0-80% of at least one (C1-20)alkyl ester of unsaturated carboxylic acid, such as butyl acrylate, and 0.5-80% associative monomer such as acrylic ester of cetystearylalcohol ethoxylated with 25 units of ethylene oxide (see the abstract, col. 2, line 43 to col. 3, line 31. col. 11, lines 40-52 and examples A-C). Zanotti-Russo further teaches a hair treating composition comprising 4% of the polymer (thickening agent), and another polymer (PVP 2%), and more than 80% of solvent, and perfume (see example C).

11. Zanotti-Russo does not teach expressly the particular amounts of each and every component in the copolymers, or the employment of t-butyl acrylate.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to make a copolymer as herein claimed because the amounts of each and every components are either overlapped, or within the range disclosed by Zanotti-Russo, because in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) In re Geisler, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997). Further, optimization within prior art conditions or through routine experimentation generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it

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is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (MPEP 2144.05). The employment of t-butyl acrylate herein is seen to be a selection from amongst equally suitable material and as such obvious. Ex parte Winters 11 USPQ 2<sup>nd</sup> 1387 (at 1388); or as a matter of optimization within the prior art conditions. As to claim 6, note polyethylene glycol is considered as a component with two activated hydrogen atoms which has been incorporated in the monomeric component of acrylic ester of cetystearylalcohol ethoxylated with 25 units of ethylene oxide. As to “hair spray” recited in claim 12, note since the copolymer is known to be useful in cosmetic products in general, and in hair treatment product in particular, the employment of the copolymer disclosed by Zanotti-Russo in hair spray composition would have been obvious to one of ordinary skill in the art.

12. Claims 1, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (JP 1213221, of record), in view of Yamamoto et al. (JP 3206024, of record).

13. Mori teaches a resin composition for hair treatment. The resin composition is obtained by copolymerization of 30-70% of polyethylene oxide acrylate, 5-25% of acrylic acid, 5-20% of c8-18 acrylate, and 20-50% of addition al viny-based monomer, such as butyl acrylate (pages 2-4). The additional vinyl base monomer contributes to the appropriate hardness and softness and the like of resulting film (see page 4, lines 31-32). Hair spray composition are provide, comprising the copolymer, other cosmetic auxiliary, and solvent. See pages 9-10.

14. Mori does not teach expressly the employment of t-butyl acrylate in the polymers, or the particular amounts of each and every component in the copolymers.

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15. However, Yamamoto et al teaches the use of t-butyl methacrylate as a monomer in resin composition for hair dressing (see page 1). Yamamoto et al. teach the t-butyl methacrylate can be used to contribute to the lipophilicity, softness, and hairwashing properties of the resin. The monomer also contributes to solubility with respect to liquefied petroleum gas for hair sprays (see pages 5, line 8-18).

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ t-butyl methacrylate as the additional vinyl based monomer.

A person of ordinary skill in the art would have been motivated to employ t-butyl methacrylate as the additional vinyl based monomer because t-butyl methacrylate is known to contribute the lipophilicity, softness, and hairwashing properties of the resin. The monomer also contributes to solubility with respect to liquefied petroleum gas for hair sprays. Further it would have been obvious to one of ordinary skill to prepare the instantly claimed compounds because t-butyl methacrylate is a structural isomers of butyl-methacrylate or iso-butyl methacrylate, and such structurally similar compounds are suggestive of one another and would be expected to share similar properties. It has been held that a compound which is structurally isomeric with a compound of the prior art is prima facie obvious absent unexpected results. In re Finely, 81 USPQ 383 (CCPA 1949); 84 USPQ 458 (CCPA 1950).

The particular range of the monomers in the copolymer is obvious as discussed above. As to claim 6, note polyethylene glycol is considered as a component with two activated hydrogen atoms which has been incorporated in the monomeric component of acrylic ester of cetystearylalcohol ethoxylated with 25 units of ethylene oxide.

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16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (WO 97/00664, of record).

17. Chen teaches a copolymer containing acrylic resin crosslinked with acrylated urethane oligomers (see the abstract). The copolymer comprises 2-20% carboxylic acid monomer such as acrylic acid (see page 4, line 15-20; and page 6, lines 9-22). The copolymer further comprise 8-75% acrylate and methacrylate such as butyl acrylate and butyl methacrylate (see page 4, lines 28-35, and page 7, lines 5-8). Additionally, the copolymer comprises 0.1-15% of a difunctional acrylated urethane oligomer (see page 4, lines 15-16). The acrylate urethane oligomer contains polypropylene oxide or polyethylene oxide moiety (see page 5, line 17 to page 6, line 8). The copolymer may be used for nail polishing (a coating) with pigment (see examples 5-6 at page 15-16).

18. Chen does not teach expressly the employment of t-butyl acrylate (or methacrylate).

However, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ butyl acrylate and/or butyl methacrylate because Chen teaches that C1-C20 alkyl acrylates and/or methacrylates are suitable in the copolymer, the employment of t-butyl acrylate herein is seen to be a selection from amongst equally suitable material and as such obvious. Ex parte Winters 11 USPQ 2<sup>nd</sup> 1387 (at 1388); or as a matter of optimization within the prior art conditions.

### ***Response to the Arguments***

Applicants' remarks and amendments submitted October 6, 2003 have been fully considered, but are mostly moot with respect to the rejections set forth above.



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Applicants assert that Mori reference does not teach or suggest the copolymer herein because Mori does not specifically teach the employment of t-butyl methacrylate; and the amount of methacrylate ester is 30-70% by weight compared to 1-20% (component C) as herein claimed. The arguments are not probative. For the employment of t-butyl methacrylate, see the rejection above. As to the amounts, note the copolymer of instant claim have four components, a, b, c, d, amount them c (1-20%) and d (1-30%) meet the limitation of methacrylate polyethylene oxide ester.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang, Ph.D. whose telephone number is (703) 308-4554. The examiner can normally be reached on Monday-Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, can be reached on (703) 305-1877. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Patent Examiner



Shengjun Wang

December 8, 2003

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